

## REMARKS

Applicant would like to thank the Examiner for the substantive review in this case. In the Final Office Action dated May 3, 2011, the Office indicated the claim amendments submitted February 23, 2011 would not be entered and rejected claims 7-12. More specifically:

- The proposed amendments to claims 7-13 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement;
- Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Japan Patent No. 11-345,732 to Okuda et al. ("Okuda") in view of German Patent No. DE 2,530,312 to Hartwig ("Hartwig");
- Claims 10-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Okuda in view of Hartwig and U.S. Patent No. 6,910,360 to Stjepan et al. ("Stjepan");
- Claim 8 was rejected under 35 U.S.C. §103(a) as being obvious over Okuda et al. in view of Hartwig and U.S. Patent No. 5,644,486 to Chang et al. ("Chang").
- Claims 9 and 12 were rejected under 35 U.S.C. §103(a) as being obvious over Okuda et al. in view of Hartwig, Stjepan and Chang.

Independent claim 7 has been amended to further define the function of the control unit. As recommended by the Examiner in the Office Action dated November 30, 2010, claim 7 has been amended to further define the movement of the pressure head as determined by the control unit. Support for the amendments to claim 7 can be found in the specification as originally published at paragraphs [0016] and [0025] - [0028].

Claim 13 has been newly added. As recommended by the Examiner, claim 13 includes the subject matter of previously pending claim 7 along with additional limitations further defining the structure of the pressure head in connection with the movement of the pressure head. Support for the newly added claim 13 can be found in the specification as originally published at paragraphs [0011] – [0014], [0016] and [0025] - [0028].

Accordingly, no new matter has been added as a result of these amendments. Upon entry of these amendments, claims 7-13 will remain pending. For the reasons set forth herein below, Applicants request that the §103(a) rejections associated with pending claims 7-12 be withdrawn.

**Claim Rejections Under 35 U.S.C. §112, First Paragraph**

On page 2 of the Final Office Action, the Examiner rejected claims 7-13, as presented in the Response to Office Action dated February 23, 2011, under 35 U.S.C. §112, first paragraph, for failing to comply with the written description requirement. Specifically, the Examiner asserts claims 7 and 13 contain subject matter which was not described in the specification in such a way to reasonably convey to one skilled in the art that the inventor, at the time the application was filed, had possession of the claimed invention. However, in the Advisory Action dated August 9, 2011, the Examiner indicates the proposed amendments do not include new subject matter. For convenience, the arguments presented in the Response to Final Office Action dated August 3, 2011 are included herein, modified to reflect the changes to claims 7 and 13.

In the Final Office Action dated May 3, 2011, the Examiner asserts the limitation “a control unit configured to receive measurements related to an electrical induction coil to be formed,” (claim 7, lines 3-4; similar limitation in claim 13, lines 3-4) does not appear in applicant’s specification. Applicant respectfully disagrees with the Examiner. The present application recites “[i]t is possible to import text files by computer [to the control unit] containing input data (information about the coil to be manufactured and the system parameters for controlling said manufacture) and export output data (information about the process) using the local network.” *See* the application as originally published at [0016]. Additionally, the application further recites the “control unit (8) which is provided with the measurements referring to number of turns of the coil in process, coiling time, times of programmed stops, set up times for the winding table, and alarms.” *See id.* at [0025]. As such, the present application clearly teaches, and would reasonably convey to one of ordinary skill in the art, that the control unit is configured to receive measurements related to an induction coil to be formed, the measurements including number of turns in the coil, coiling time, and other related measurements. One of ordinary skill in the art of manufacturing induction coils would appreciate and readily identify the control unit is configured to receive measurements related to the induction coil to be formed, specifically at the portions identified in the arguments above. In the Advisory Action dated August 9, 2011, the Examiner confirmed that the limitation “a control

unit configured to receive measurements related to an electrical induction coil to be formed,” does not include new subject matter.

In the Final Office Action dated May 3, 2011, the Examiner also asserts the limitation “wherein the working position of the pressure head is determined by a comparison by the control unit of a real position of the pressure head against a theoretical position of the coil to be formed as determined by the control unit from the measurements,” does not appear in the specification. The previously proposed amendment to claim 7 has been revised to recite “a size of the coil to be formed is known by the control unit during manufacture based upon a comparison by the control unit of a real position of at least a portion of the pressure head against a theoretical position of the at least a portion of the pressure head as determined by the control unit from the measurements,” (claim 7, lines 6-10, similar limitation in claim 13, lines 7-11).

The present application recites “[t]he head is fitted onto an arm that is shown in the figure in its working position **2** and its resting position **4**. The change from one to the other is made by rotating on the support **3**,” which “is controlled by a control unit (**8**).” See the application as originally published at [0023] and [0025]. Thus, the control unit controls the pressure head as it transitions from a resting position (i.e., no coil is being formed) to its working position (i.e., a coil is being formed). The control unit further controls the formation of a coil by altering the process based upon the measurements of the coil to be formed. *See id.* at [0025] and [0026]. Specifically, “the real size of the coil [to be formed] is known during manufacturing, by measuring the position of the pressing wheel [of the pressure head] and comparing it with the theoretical value that it should have.” *See id.* at [0014]. Additionally, the control unit “has the real position of the pressure head **2** which it compares with the theoretical position of the coil at all times in its development, stopping the process when the difference requires manual padding.” *See id.* at [0026]. Additionally, the “real size of the coil is known whilst manufacturing [as determined by the working position of the pressure head], by measuring the position of the pressing wheel and comparing it with the theoretical value it should have.” *See id.* at [0014]. Thus, the real size of a coil to be formed (i.e., based upon the position of the pressure head when forming a coil as defined in the application in paragraphs [0014] and [0023]) is determined by continually comparing the real position of the pressure head as it forms the induction coil with the theoretical position of the pressure head during manufacture of the coil.

As such, the present application clearly teaches, and would reasonably convey to one of ordinary skill in the art, that the control unit compares a real position of the pressure head against a theoretical position of the pressure head. The application further teaches this comparison is used to determine the actual shape and size of the coil being formed. One of ordinary skill in the art of manufacturing induction coils would appreciate and readily identify the determination of the size of the coil to be formed by the control unit based upon the application as originally filed, specifically at the portions identified in the arguments above.

Accordingly, the amendment to claim 7 and the addition of claim 13 as contained herein do not introduce new subject matter.

### **Claim Rejections under 35 U.S.C. §103(a)**

#### **Claims 7-12**

As amended, independent claim 7 is nonobvious over Okuda in view of Hartwig because the cited references, either alone or in combination, fail to teach or suggest each and every limitation of claim 7. More particularly, the combination of Okuda and Hartwig fails to teach or suggest, among other things, the following limitations of claim 7:

- A control unit configured to receive measurements related to an electrical induction coil to be formed; and
- A pressure head operably connected to the control unit and mounted on a support on which the pressure head pivots between a resting position and a working position, wherein a size of the coil to be formed is known by the control unit during manufacture based upon a comparison by the control unit of a real position of at least a portion of the pressure head against a theoretical position of the at least a portion of the pressure head as determined by the control unit from the measurements, the pressure head having a vertical axle and a horizontal axle;

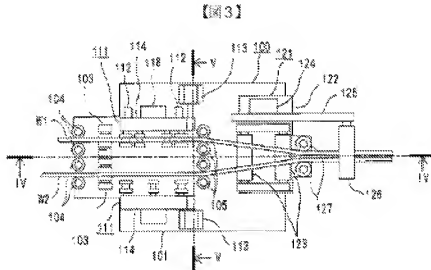
Okuda teaches an arrangement for producing a wire coil for electrical equipment. It should again be noted that Applicant is referring to the machine translation of Okuda provided by the Examiner in the Office Action dated October 3, 2008, as is best understood by the Applicant. Okuda provides for a coil producing technique that takes wire from two spools that may be wound at different pressures, combines the wires and winds the two wires into a coil at a constant pressure. *See* Okuda at [0068]. These two wires are combined by vertical and

horizontal rollers (items **126** and **127** in the figures) which form a pressure head that is rigidly mounted to a support arm (item **122** in the figures). *See id.* at [0027]. A single hydraulic cylinder (item **124** in the figures) is used to move horizontal roller **126**. Once the two wires are combined, a coil is then formed by a coil former (item **81** in the figures), not the vertical and horizontal rollers. Rather, the horizontal and vertical rollers are merely used to combine the two wires. *See id.* at [0029]. Additionally, the Examiner acknowledges that Okuda lacks a teaching of at least one hydraulic cylinder attached to both the vertical and horizontal axes and a control unit, and looks to Hartwig.

It should also be noted that in previous Office Actions (see, for example, the Office Action dated February 2, 2010) the Examiner acknowledged that Okuda fails to teach a control unit. However, in the outstanding Office Action, the Examiner alleges Okuda does teach a control unit. The item the Examiner is referring to is defined by Okuda as a rise-and-fall cylinder **124**. The rise-and-fall cylinder **124** functions, at best, as a hydraulic cylinder, causing the roller **126** of Okuda to move vertically. There is no suggestion in Okuda that this functions as the claimed control unit, specifically a control unit configured to receive measurements related to an electrical induction coil to be formed. Similarly, the rise-and-fall cylinder **124** does not perform any comparisons (i.e., the comparison by the control unit of a real position of the pressure head against a theoretical position of the pressure head as determined by the control unit from the measurements) as required by claim 7. As such, Okuda does not disclose a control unit as required by claim 1. Additionally, by presenting contradictory arguments, the Office invalidates the validity of the rejections. Whether a reference teaches a component is a matter of fact, not opinion. By revising a rejection to include an element previously acknowledged as being lacking in the reference, the Office's damages the credibility of the rejection. "[T]he agency's contradictory findings of technological facts based on shifting perceptions of the prior art impeach the deference normally owed to administrative findings of fact." *See In re Vaidyanathan*, Appeal No. 2009-1404 (Fed. Cir. May 19, 2010).

In the Response to Arguments (see page 8 of the Office Action), the Examiner argues that Okuda teaches a vertical wheel comprising at least one horizontal disc positioned such that when conductor material is fed into the pressure head the conductor material maintains contact with the vertical wheel. The Examiner asserts that Okuda teaches a vertical wheel **126** and an opposing

horizontal disc **123** which “is horizontal and opposes item **126**.” *See* Office Action at 8:15-16. Both reference items **123** and **126** are illustrated in FIG. 3 of Okuda (reproduced below).



As shown in FIG. 3, both reference items **123** and **126** are oriented identically, in this case vertically. Item **123** is not horizontal and opposing reference item **126** as suggested by the Examiner. Rather, both reference items **123** and **126** are perpendicularly arranged to one another and thus cannot be alternately vertical or horizontal. As such, the Examiner’s argument is not supported by Okuda as Okuda fails to teach a vertical wheel comprising at least one horizontal disc as is required by claim 1.

Hartwig discloses an arrangement for pressing the turns of an axial progressive winding coil for electrical equipment. *See* Hartwig at 1:1-2. It should be noted that Applicant is referring to the machine translation of Hartwig provided by the Examiner in the Office Action dated October 3, 2008, as is best understood by Applicant. Hartwig provides for a more compact pressure head by removing the pressure cylinders that provide the force to push the pressure head against the coil to a location away from the head. The cylinders also provide for a constant transfer of pressure to the pressure head, and thus to the coils via a mounting rod. This provides for a more compact pressure head, allowing for more compact coils. *See id.* at 3:9-13. In order to provide this constant pressure, Hartwig rigidly mounts the pressure head to the mounting rod such that the head cannot pivot, as pivoting would result in an unexpected change of pressure as applied at the pressure head. Similarly, as the head of Hartwig cannot pivot, Hartwig cannot provide a feeder that mounted on the same support as the pressure head which feeds the

conductor tangentially to the vertical and horizontal wheels as the wheels cannot rotate about the coil as it is formed. *See id.* at 5:3-7.

The Examiner relies on Hartwig to teach a hydraulic cylinder connected to a control unit as well as both the horizontal and vertical axes of the pivoting pressure head of Okuda. As discussed above, Okuda fails to disclose a pivoting pressure head having at least one vertical wheel comprising at least one horizontal disc and at least one horizontal wheel positioned such that a conductor material passing there through is formed into a coil. Additionally, Hartwig is silent on the concept of a pivoting pressure head, and thus, provides no teaching for applying a hydraulic cylinder to the horizontal and vertical axes of a pivoting pressure head. As best understood by the disclosure of Hartwig, the hydraulic cylinder is attached to only a single axle. *See id.* at 2:1-6. Thus, at best, the combination of the teachings of Okuda and Hartwig would result in a rigidly mounted pressure head having a hydraulic cylinder attached to either the horizontal or vertical axle, not both as is required by claim 7.

In contrast, claim 7 requires a pressure head mounted on a support on which the pressure head pivots from a resting position to a working position. Additionally, claim 7 requires the control unit compare the real position of the pressure head and the theoretical position of the pressure head to determine the size of the coil to be formed. This, along with the claimed arrangement of the at least one vertical wheel comprising at least one horizontal disc, at least one horizontal wheel, and a hydraulic cylinder connected to both the vertical and horizontal wheels provides a means for the pressure head to produce suitable pressure for forming the coils without any added outside forces acted upon the pressure head by the support as well as a control system where the size of the coil being formed is accurately controlled. Rather than merely providing a mounted pressure head having a hydraulic cylinder connected to either the horizontal or vertical axle as is taught by the proposed combination of Okuda and Hartwig, claim 7 requires the pressure head to be mounted on a support such that the at least one hydraulic cylinder is connected to the horizontal and vertical axes such that the pressure exerted by both axes is controlled by the control unit. Thus, the system of claim 7 includes a control unit may regulate the pressure exerted by wheels mounted on the axes during the formation of a coil based upon measurement information received about the coil to be formed. Neither of the cited references, whether considered alone or in combination, suggest such a result.

Accordingly, for at least these reasons, claim 7 is nonobvious over the combination of Okuda in view of Hartwig because the cited references fail to teach or suggest each and every limitation of claim 7. Further, claims 8-12, which depend from and incorporate all of the limitations of claim 7, are likewise nonobvious over the cited references. *See* MPEP §2143.03 (stating that if an independent claim is nonobvious under 35 U.S.C. §103(a), then any claim depending therefrom is nonobvious). Accordingly, Applicant requests that the rejections associated with claims 7-12 be withdrawn.

### Claim 13

Newly added claim 13 is novel and non-obvious over the cited prior art; whether considered alone or in any combination. Specifically, claim 13 requires:

- A control unit configured to receive measurements related to an electrical induction coil to be formed; and
- A pressure head operably connected to the control unit and mounted on a revolving arm about which the pressure head pivots between a resting position and a working position in response to a command from the control unit, wherein a size of the coil to be formed is known by the control unit during manufacture based upon a comparison by the control unit of a real position of at least a portion of the pressure head against a theoretical position of the at least a portion of the pressure head as determined by the control unit from the measurements, the pressure head having a plurality of vertical axles and a plurality of horizontal axles.

For substantially the same reasons set forth above in regard to claim 7, claim 13 is novel and non-obvious over the prior art. Additionally, claim 13 further defines the pressure head as having multiple vertical and horizontal axles, each of which includes either a horizontal wheel or a vertical wheel. These features, along with the specific limitations related to the wheels, further defines the specific structure of the pressure head as suggested by the Examiner on page 9 of the Office Action. As such, Applicant requests that claim 13 be indicated as allowable over the cited prior art.

All of the stated grounds of rejection have been properly traversed, accommodated or rendered moot. There being no other rejections or objections, Applicant respectfully requests that the current application be allowed and passed to issue.



If the Examiner believes for any reason that personal communication will expedite prosecution of this application, I invite the Examiner to telephone me directly.

### **AUTHORIZATION**

The Commissioner is hereby authorized to charge any additional fees which may be required for this Amendment and Response, or credit any overpayment, to Deposit Account No. 50-0436.

Respectfully submitted,

PEPPER HAMILTON LLP

A handwritten signature in black ink, appearing to read 'J. Brancolini', with a horizontal line extending to the right.

John R. Brancolini  
Registration No. 57,218

Pepper Hamilton LLP  
BNY Mellon Center, 50<sup>th</sup> Floor  
500 Grant Street  
Pittsburgh, PA 15219-2502  
Telephone: (412) 454-5000  
Facsimile: (412) 281-0717  
Date: September 6, 2011